

METALLIC SEAL

ABSTRACT OF THE DISCLOSURE

A metallic seal is provided that concentrates the available load over a narrow band to produce a sealing dam over a sufficient width to minimize leakage on a molecular level. The metallic seal has a first annular beam section, a second annular beam section, and inner and outer surfaces extending between the first and second annular beam sections. One of the inner and outer surfaces has an annular recess that at least partially defines an annular column section of material extending substantially perpendicular between said first and second annular beam sections thereto. The first annular beam section has a first non-sealing surface and a first raised portion with a first annular sealing surface facing in a first axial direction to contact a first member for creating a first annular sealing dam therebetween. The second annular beam section has a second non-sealing surface and a first raised portion with a second annular sealing surface facing in a second axial direction, which is opposite to the first axial direction, to contact a second member for creating a second annular sealing dam therebetween. The annular inner surface extends between the first and second sealing surfaces to form a central passageway. The metallic seal is used to create a seal between a pair of mating surfaces of a first member and a second member. First and second members are coupled together by a plurality of fasteners or bolts. By tightening the fasteners the seal is loaded, and thus, compressed to plastically deform and create an annular seal between the first and second members.